



Turbocharged Diesels

The truck shown above is powered by a turbocharged L10 engine (right), one model of a diversified line of diesels and components manufactured by Cummins Engine Company, Columbus, Indiana. The company's principal market is the heavy duty truck industry; every major U.S. truck manufacturer offers Cummins engines as standard or optional equipment.

Part of the company's research effort is aimed toward introduction of advanced turbocharged engines that

deliver extra power with greater fuel efficiency. In a number of feasibility studies of turbine rotor designs, engineers of Cummins' turbocharger group have utilized a computer program from the inventory of NASA's Computer Software Management and Information Center (COSMIC). Originally developed by Lewis Research Center, the program—Fortran IV Program to Estimate Off Design Performance of Radial Flow Turbines—calculates turbine rotor mass flows and efficiencies to assist in predicting the performance characteristics of a possible turbine design. The company reports that use of the program substantially reduced software development costs.